

# TRUCK INCENTIVES & USE RESTRICTIONS

## Description

Truck use restrictions are intended to encourage freight operators with a financial incentive and/or place regulatory limits on the time, location, and manner in which truck traffic can deliver to certain areas or travel in some corridors. The goal of these incentives or restrictions is to shift truck traffic off of congested facilities and out of peak periods in order to both improve truck flow and better accommodate passenger travel. Techniques used to do this include:

- Deliveries are restricted to non-peak daytime or nighttime hours.
- Assessing truck access fees/tolls during peak periods and/or providing free passage during non-peak or nighttime hours.
- Providing incentives to trucking companies and businesses to shift delivery to overnight/off-peak hours.
- Prohibiting on-street truck parking (freeing a turn lane) or left turns where no turn lane exists.

## Target Market

### *Through-Movement Coordination*

Timing of “through” truckload freight movements on long-distance trips can be coordinated to pass through congested urban freeway corridors during overnight/non-peak traffic hours to avoid delay on urban highways and arterials. This application can be implemented without a public sector mandate if trucking companies and receiving businesses agree to labor hours and schedules that enable the delivery of goods at the destination while meeting regulatory restrictions on truck driver hours-of-service and operating hours of the loading and receiving facilities.



PierPASS OffPeak, Long Beach, CA

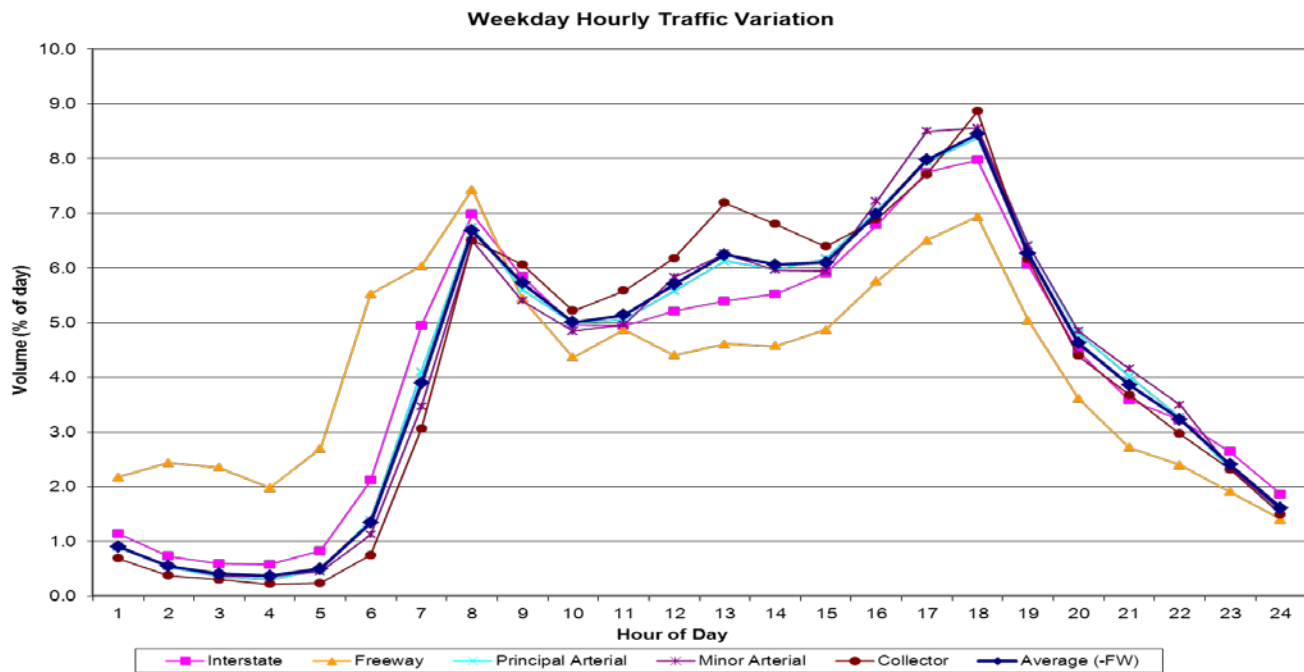
<b>Cost:</b>	●○○○○
<b>Time:</b>	<b>Short</b>
<b>Impact:</b>	<b>Regional</b>
<b>Who:</b>	<b>State &amp; Local</b>
<b>Hurdles:</b>	<b>Legislative &amp; Regulatory</b>

### *Urban Trucking Percentage Limits*

A more localized, urban-specific application of this strategy adjusts a percentage of local deliveries/trucking operations within a downtown/central business district (CBD) area or near a high volume freight/goods distribution traffic area (i.e., a port facility or manufacturing area) on urban arterial and local streets to nighttime hours. In doing so, local truck traffic generated by deliveries avoid recurring traffic congestion and delivery route times can be shortened. Deliveries to and from high freight traffic generators such as ports can also be improved by distributing inbound and outbound gate traffic at the facility over a longer period during each day.

### **How Will This Help?**

Through trucks on urban highway segments can reduce freight transit times through an urban area and potentially increase their effective range of delivery during a driver shift by



changing operational hours to avoid urban peak period congestion.

Similarly, urban restrictions on the times when downtown area truck deliveries may occur can improve general traffic flow during the busiest part of the day especially in areas where there are narrow streets, restricted turning radii, or limited parking for loading and unloading.

Crashes and merging delay can be reduced by limiting the need for trucks to double park in heavy traffic periods while making deliveries. Moving the delivery time to off-peak hours can reduce delivery truck travel time between stops; trucking companies can also benefit from the reduced number of trucks and crews needed if customers can accommodate differing hours. The graph above shows an example distribution of typical hourly traffic variation for different roadway types.

### Implementation Examples

Several recent examples of truck use restrictions and off-hours/overnight truck deliveries have taken place in the U.S. Boston and Cambridge, Massachusetts, instituted limited delivery in downtown areas except for designated truck routes unless delivering to a specific business.<sup>1</sup>

The Ports of Los Angeles and Long Beach use the PierPASS OffPeak program to encourage greater use of container terminals from 6 p.m. to 3 a.m. About 40 percent of container cargo traffic shifted to the off-peak during the program's first three years prior to the economic downturn in 2008; recent numbers are closer to 30 percent.<sup>2</sup>

The practice of shifting freight deliveries to nighttime or off-peak hours is implemented more in other countries. Overnight freight delivery was one of the policies studied by the European Commission under the NICHES (New and Innovative Concepts for Helping European Transport Sustainability) Program between 2004 and 2007.<sup>3</sup> This study examined nighttime delivery practices in the Netherlands, Barcelona, Spain, and at several other locations.<sup>4, 5, 6</sup>

In the U.S., a major pilot study of this strategy has recently been completed and a more formal implementation process is underway in the New York City area under a project funded by the US DOT, supported by the New York City DOT, and carried out by researchers from Rensselaer Polytechnic Institute.<sup>7</sup> The pilot study included an analysis of GPS truck tracking. The analysis indicated that during off-peak deliveries, a truck on a defined route travels an average of 8 mph

whereas trucks often average below 3 mph during regular hours. Traffic simulations showed that, with financial incentives to customers to receive off-hours deliveries, trucking companies can garner significant financial benefits in operations. Simultaneously, the number of trucks on the road during peak traffic hours and delivery zone conflicts near large traffic generators can be reduced. During the federally-funded pilot study that ended in January 2010, delivery times dropped an average of 48 minutes, fuel costs were reduced, trucking companies dramatically reduced their monthly parking ticket costs (which are considered a cost of doing business), and several business needs were identified for broader implementation. As of early 2012, recruiting was underway for additional businesses to participate in a full implementation program within the New York City area.<sup>8</sup>

This strategy can also be implemented on a short-term or temporary basis during special events (e.g., major conferences or sporting events) that generate much larger than usual traffic volume within an urban area. For example, during the 2012 Summer Olympics, London will implement the Olympic Route Network (ORN) and shift most freight deliveries to the midnight to 6 a.m. time period. As described below, shifting to these hours can introduce other issues such as noise pollution and the need for off-hours delivery schemes for

both urban residents and businesses where the deliveries are taking place.

### **Application Techniques and Principles**

Implementing this practice requires the cooperation of both trucking companies and receiving businesses. The public sector's interest in encouraging this strategy is to remove congestion caused by delivery trucks during the normal daytime peak traffic hours. The initial step toward implementation is to identify potential businesses in an urban CBD or high traffic generation area where a large number of deliveries take place. Finding willing stakeholders that will adjust their business practices and/or identifying methods to compensate businesses for any additional costs associated with the change in delivery hours is essential. Moderate public sector investment in the form of incentives to business for shifting delivery hours may be necessary to effect these changes.

### **Issues**

It is generally easier for trucking companies to change their delivery schedule than it is to reach agreement with businesses to accept deliveries during off-hours. Implementing this strategy requires receiving businesses to have staff on-site to accept the delivery at a scheduled time, provide delivery truck drivers with access to the business (or part of the business) for drop-offs, or installation of an on-site, separate, secure



Night Delivery to Grocery Store in Barcelona, Spain (NICHES Program)

For more information, please refer to: <http://mobility.tamu.edu/mip/strategies.php>.

(e.g., weatherproof, lockable) delivery location. Each of these options requires close coordination and incurs costs on the business.

Noise generated in urban areas by truck operations at night also poses an issue. Noise from truck engines and brakes, opening and closing of doors on trucks and at delivery sites, delivery personnel communicating, and alarms that sound when trucks are backing up to loading areas are nuisance issues. In foreign applications, special quieter equipment, training of overnight delivery personnel to minimize noise, and special coatings or other soundproofing in the delivery dock or roadway area reduces noise complaints by neighbors.

Changes in delivery times may increase wage costs to businesses. Some situations may require businesses to hire new staff or pay existing staff to work outside of normal hours to accept deliveries. Night deliveries may also be problematic for businesses that operate primarily at night or during evening hours, such as a restaurant or bar, because that is when their staff is busiest.

### **Who Is Responsible?**

Most of the necessary implementation steps for this strategy are taken by private sector trucking companies and the businesses receiving deliveries. Both must agree to shift their business practices to allow for extended or new hours to deliver and/or receive products. Public sector (i.e., city, MPO, or TxDOT) involvement in the process may be to incentivize the private business to take these steps as a means to reduce congestion levels by reducing the number of trucks in traffic or impeding traffic flow by double parking during peak traffic hours. The NYC pilot project estimated cost levels for these incentives to be effective; however, those numbers were developed for a small study area and are likely location dependent. The public

sector must also ensure that truck operations and associated nighttime noise do not negatively affect those living near delivery locations.

### **Project Timeframe**

The timeframe for implementing this strategy on a limited basis could be as short as a few months; however it likely would take one to two years or longer to get wider implementation. The timeframe and effectiveness of this strategy is determined by the number of private sector businesses that agree to participate.

### **Cost**

Public sector costs for truck restrictions in a downtown area are largely limited to signage and program administration costs. Implementation costs of an off-hours delivery program within a U.S. city are unknown at this time. Anecdotal information and pilot studies indicate that public sector financial incentives to cover the costs of additional workers, overtime pay for existing workers, or alternative means of securing delivered goods during off-hours, such as lockable storage bins, might be necessary to encourage broader implementation. Specific costs for programs at a port facility would vary according to size of the program and spectrum of business covered.

### **Data Needs**

Research would need to be done in each urban area or near major urban traffic generators on the number and type of businesses that might be able to shift deliveries to off-peak traffic hours. Cost data for required equipment, personnel, and incentives to encourage shifting of delivery hours must also be gathered. General data and information on urban congestion levels for many cities throughout the U.S. and on major corridors within those areas can be found on the TTI Urban Mobility Report website.<sup>9</sup>

## Truck Incentives & Use Restrictions Best Practice

- Type of Location: Urban freeways for through freight movements, downtown, or high freight traffic areas.
- Agency Practices: Trucking firms and businesses must agree to shift delivery and receipt hours.
- Frequency of Reanalysis: Ongoing by both trucking firms and the public sector when incentives are being used to encourage participation in this strategy.
- Supporting Policies or Actions Needed: Public sector agencies (e.g., cities, MPOs, DOTs) may have to provide financial incentives to businesses to cover costs of changing delivery hours in exchange for reduced truck congestion during peak travel hours.
- Complementary Strategies: Providing additional truck parking and loading areas in downtown or high freight traffic areas. Development of noise guidelines for nighttime truck deliveries in urban areas.

## For More Information and References

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